SDB

COMMONWEALTH of VIRGINIA

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COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
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STATEMENT OF LEGAL AND FACTUAL BASIS

Super Radiator Coils
451 Southlake Boulevard Richmond, Virginia
Permit No. PRO50906

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Super Radiator Coils has applied for a renewal Title V Operating Permit for its heat transfer coil manufacturing plant, 451 Southlake Boulevard-Richmond facility. The Department has reviewed the application and has prepared a draft renewal Title V Operating Permit.

Engineer/Permit Contact: _____ Date: May 31, 2011
Bruce C. Pollock
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Air Permit Manager: _____ Date: May 31, 2011
James E. Kyle, P.E.

Deputy Regional Manager: _____ Date: MAY 31, 2011
Kyle Ivar Winter P.E.

FACILITY INFORMATION

Permittee/ Facility
Super Radiator Coils
451 Southlake Boulevard
Richmond, VA 23236

Plant ID: 041-0110

SOURCE DESCRIPTION

SIC Code: 3585 – Refrigeration and Heating Equipment
3548 – Welding Apparatus
2448 – Wood Pallets and Skids

NAICS Code: 333415 – Machinery Manufacturing

The facility is a manufacturer of finned tube heat transfer coils. Hairpin benders and punch presses are used, operating independently, to make tubes and fins, respectively. Their outputs are then assembled and put through a hydro expanding process that joins tubing and fins. Then the product is placed in the solvent degreaser for cleaning. Next the product goes through brazing or welding. Depending upon customer requirements, the product may be spray painted. The last operation is to crate the finished finned tube coil for shipment. Most of the facility was originally constructed in 1980, with the paint spray booth being added in 1989 and additional vapor degreasers added in 2004 and 2010. The 2010 vapor degreaser replacement included a closed loop carbon bed adsorption system.

The facility had been a Title V major source of more than 10 tons/yr of a single federal HAP, perchloroethylene. The first Title V permit was issued on May 9, 2001; and the renewal was issued on June 1, 2006. This Title V renewal replaces the one currently in effect. However, the perchloroethylene potential to emit (PTE) is limited to less than 5.28 tons per year by the current (and only) April 30, 2010 New Source Review permit. This limit is based on the current MACT Subpart T, 40 CFR 63.471(b) (2) 4800 kg/yr limit. Since the facility did not limit their PTE before the original MACT T compliance date, it is still considered as a major source. The facility, therefore, remains subject to Title V Operating Permit requirements based on US EPA's "once in, always in" policy.

This source is located in the Richmond Ozone Nonattainment area (marginal) and is in attainment area for all other pollutants. The facility was originally permitted with an NSR permit on April 16, 1980 and subsequently permitted for increased emissions on August 30, 2000; and was superseded with a permit for additional vapor degreasers on July 15, 2004; and was most recently superseded by the NSR issued on April 30, 2010.

COMPLIANCE STATUS

After receiving a construct and operate permit that included the vapor degreasing operation in 1980, the facility was issued a NOV in 1991 for constructing a paint spray booth (in 1989 as noted above) without a permit and violating annual hours of operation and VOC emission limits (vapor degreaser) from the 1980 permit. As a result of these violations, the source was issued a modified permit in 1992 that placed new restrictions and limits on the vapor degreaser and paint spray booth. The 1992 permit superseded the earlier 1980 permit. A New Source Review permit was issued August 30, 2000, to increase the amount of perchloroethylene throughput and the corresponding emission limit and to remove the spray booth as a significant emission unit since the spray booth's PTE had now been determined to be exempt from Article 6/insignificant for Title V purposes (4.73 tons/yr VOC). A New Source Review permit was issued July 15, 2004 superseding the August 30, 2000 permit. The July 15, 2004 permit was issued to construct an open top vapor degreaser. The July 15, 2004 permit was then superseded with a New Source Review permit on April 30, 2010. This permit was issued to construct a larger open top vapor degreaser (E3-new) and a new closed loop ventilation control system (E9).

The facility was last inspected on December 8, 2009 and was found to be in compliance.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

A. The emissions units at this facility consist of the following:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
E3 - Existing	V1	Open Top Vapor Degreaser Autosonics Model 302 Installed 1980	7' x 14' 2,000 lbs product/hour	Condenser and freeboard refrigeration device	2-20-1	Perchloro-ethylene	July 15, 2004
E3 - New	V4	Open Top Vapor Degreaser Baron Blakeslee Installed 2010	8' x 17' 4,000 lbs product/hour	Condenser and freeboard refrigeration device	2-20-3	Perchloro-ethylene	April 30, 2010
E4	V2	Open Top Vapor Degreaser Ultra-Kool Model 160-30-40 Installed 2005	12,000 lbs product/hour	Condenser and freeboard refrigeration device	2-20-2	Perchloro-ethylene	July 15, 2004
E9	V3	AMCEC Inc, Solvent Recovery System Installed 2010	274 Lbs/Hr	Carbon adsorption beds	2-20-4	Perchloro-ethylene	April 30, 2010

EMISSIONS INVENTORY

An emission update was received for the year 2009. The actual annual throughput of HAP (perchloroethylene) from the degreaser was 33.01 tons.

APPLICABLE REQUIREMENTS FOR THE OPEN TOP VAPOR DEGREASERS (EMISSION UNIT IDs: E3-Existing, E3-New and E4)

The Autosonics vapor degreaser (Unit Ref. No. E3-Existing), the Baron Blakeslee vapor degreaser (Unit Ref. No. E3-New) and the Ultra-Kool vapor degreaser (Unit Ref. No. E4) have the following applicable requirements, from the specific conditions from the Minor NSR Permit issued April 30, 2010:

Condition #3: The VOC/HAP emissions from the vapor degreasing process chambers shall each be controlled by: a primary condenser, a device that shuts off the sump heat if the sump liquid solvent level drops to the sump heater coils, and a vapor level control device that shuts off sump heat if the vapor level in the vapor cleaning machine rises above the height of the primary condenser. These control devices shall be provided with adequate access for inspection and shall be in operation when the vapor degreasing process is operating. (This condition is applicable to all three units.)
(9 VAC 5-80-1180 and 40CFR 63.463)

Condition #4: The VOC/HAP emissions from the vapor degreasing process chambers shall each be controlled by: a freeboard refrigeration device, reduced room draft, and a freeboard ratio of at least 1.0. The vapor degreasers and their control devices shall be provided with adequate access for inspection and shall be in operation when the vapor degreasing process is operating. (These requirements are applicable to all three degreasers, however, due to design and configuration, "reduced room draft", only applies to the E3-Existing degreaser.)
(9 VAC 5-80-1180 and 40CFR 63.463)

Condition #5: The VOC/HAP emissions from the vapor degreasing process chambers shall each be controlled by a carbon bed adsorption system (E-9). The concentration of organic solvent in the exhaust from this device shall not exceed 100 parts per million of any Halogenated (HAP) compound. The solvent recovery system (SRS) shall be provided with adequate access for inspection. (This condition is applicable to all three units.)
(9VAC 5-80-1180, 9 VAC 5-50-260 and 40CFR 63.463(e)(2)(vii))

Condition #7: The solvent recovery system adsorption devices shall be equipped with a hydrocarbon analyzer to continuously measure and record Absorber outlet gas concentration of perchloroethylene. The analyzer shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. The analyzer shall be equipped with alarms at the unit

and in the facility to alert the permittee of any malfunction. The analyzer shall be provided with adequate access for inspection and shall be in operation when the absorbers are operating. (9 VAC 5-80-1180 D and 9 VAC 5-60-300 et seq.)

The vapor degreasers have the following applicable requirements from the MACT (40 CFR 63) Subpart T (National Emission Standards for Halogenated Solvent Cleaning) of which some are also found in Condition #6, *Work Practice Standards* of the April 30, 2010 permit. Many of these requirements apply only to the E-3 existing degreaser and some apply to all three degreasing units. The requirements are separated as follows:

E-3 Existing Only:

T1 - reduced room draft (40 CFR 63.463(a)(1)(ii))
T8 - reduced room draft (40 CFR 63.463(d)(1)(ii))
T19 - chilled air blanket temperature no greater than 30 percent of solvent's boiling point (40 CFR 63.463(e)(2)(i))
T20 - air flow across the top of the freeboard area not to exceed 50 ft/min using the procedures of (40 CFR 63.466(d) and § 63.463(e)(2)(ii)(A))
T21 - establish and maintain the operating conditions under which the wind speed was demonstrated to be 50 ft/min or less as described in (40 CFR 63.466(d) and §63.463(e)(2)(ii)(B))
T23 - weekly monitoring and recording to be conducted for temperature of air blanket during idle mode (40 CFR 63.466(a)(1))

E-3 Existing, E-3 new and E-4:

T2 - freeboard ratio greater than 0.75 (40 CFR 63.463(a)(2))
T3 - hoist speed of equal to or less than 11 ft/min (40 CFR 63.463(a)(3))
T4 - sump heat/solvent level interlock (40 CFR 63.463(a)(4))
T5 - sump heat/vapor level interlock (40 CFR 63.463(a)(5))
T6 - primary condenser (40 CFR 63.463(a)(6))
T7 - freeboard ratio greater than 1.0, operate freeboard refrigeration device, employ reduced room draft (40 CFR 63.463(b)(2)(i))
T9 - hoist speed 3 ft/min or less (40 CFR 63.463(d)(2))
T10 - parts oriented so solvent drains freely (40 CFR 63.463(d)(4))
T11 - parts not removed from degreaser until dripping stops (40 CFR 63.463(d)(5))
T12 - during startup, primary condenser activated before condenser (40 CFR 63.463(d)(6))
T13 - during shutdown, sump heater deactivated before primary condenser is turned off (40 CFR 63.463(d)(7))
T14 - threaded couplings and submerged piping to be used in solvent transfers (40 CFR 63.463(d)(8))
T15 - maintain solvent degreaser and control equipment according to manufacturer's recommendations (40 CFR 63.463(d)(9))

T16 - degreaser operators shall complete operating procedures test (40 CFR 63.463(d)(10))
T17 - waste solvents, still bottoms, and sump bottoms to be stored in closed containers. (40 CFR 63.463(d)(11))
T18 - conduct monitoring of each control device (40 CFR 63.466)
T22 - determine potential to emit (PTE) from all solvent cleaning operations (40 CFR 63.465(e)(1))
T24 - monthly monitoring and recording conducted for hoist speed (40 CFR 63.466(c)(1-3))
T25 - conduct initial monitoring test of windspeed and room parameters followed by quarterly monitoring of windspeed and weekly monitoring of room parameters. (40 CFR 63.466(d)(1)(i-ii))
T26 - maintain records of owner's manuals for each vapor degreaser and all of its control devices for the machine's lifetime (40 CFR 63.467(a)(1))
T27 - date of manufacture for the solvent cleaning machine and all of its control devices for the machine's lifetime. (40 CFR 63.467(a)(2))
T28 - halogenated HAP solvent content for each solvent used for the machine's lifetime. (40 CFR 63.467(a)(5))
T29 - the results of control device monitoring required by 63.466 for a period of 5 years. (40 CFR 63.467(b)(1))
T30 - estimates of annual solvent consumption for a period of 5 years (40 CFR 63.467(b)(3))
T31 - submit annual report including annual solvent consumption (40 CFR 63.468(f)(1-3))
T32 - submit semiannual exceedance reports (40 CFR 63.468(h)(1-3))
T33 - if carbon adsorber is used, records of date and results of weekly measurement of halogenated HAP solvent concentration in carbon adsorber exhaust. (40 CFR 63.467(b)(4))

Condition #10: Except where this permit is more restrictive than the applicable requirement, the vapor degreasing equipment as described in Condition 1, shall be operated in compliance with the requirements of 40 CFR 63, Subpart T.
(9 VAC 5-80-1180, 9VAC 5-60-90 and 9 VAC 5-60-100)

Condition #12: Monthly and annual records of perchloroethylene.
(9 VAC 5-50-50)

GENERALLY APPLICABLE STANDARD REQUIREMENTS

New and Modified Source Opacity Standard - Unless specified otherwise in this part, on or after the date on which the performance test required to be conducted by 9 VAC 5-50-30 is completed, no owner or other person shall cause or permit to be discharged into the atmosphere from any affected facility any visible emissions which exhibit greater that 20% opacity, except for one six-minute period in any one hour of not more than 30% opacity. Failure to meet the requirements of this section because of the presence of water vapor shall not be a violation of this section. (9 VAC 5-50-80)

Testing - The permitted facility shall be constructed so as to allow for emissions testing at any

time using appropriate methods. Upon request from the Department, test ports shall be provided at the appropriate locations. EPA Test Method 9 should be used for the Visible Emission testing for the facility and EPA Test Method 18 should be used for VOC/HAP for the degreaser. (9 VAC 5-50-30)

Additionally, certain conditions within existing NSR permits may be applicable to all newly constructed or modified equipment that receive a permit. Below is a condition from the 2010 NSR permit:

Condition #18
In order to minimize the duration and frequency of excess emissions due to malfunctions of process equipment or air pollution control equipment, the permittee shall:

a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance. These records shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

b. Maintain an inventory of spare parts that are needed to minimize durations of air pollution control equipment breakdowns.

c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.

d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

e. Each operator of a solvent cleaning machine shall complete and pass the applicable sections of the test of solvent cleaning procedures in the attachment to this permit if requested during an inspection

(9 VAC 5-50-20 E and 9VAC 5-80-1180)

This condition is being retained in the Title V permit because it is an applicable requirement generally applied to all modified and newly constructed equipment permitted through the minor NSR permit program.

FUTURE APPLICABLE REQUIREMENTS - N/A

INAPPLICABLE REQUIREMENTS

There are no inapplicable requirements for the units at this facility.

OBSOLETE REQUIREMENTS

Certain conditions of the 2010 NSR permit for the source are obsolete, no longer serve any meaningful purpose, have been fulfilled or are unnecessary for Title V considerations.

Condition 13 Initial Notification. This condition requires written notification of actual date on which construction/modification/reconstruction of vapor degreaser and solvent recovery system commenced, anticipated start-up date and actual start-up date. The notifications have been submitted to the DEQ.

Condition 16 from the 2010 permit is being left out of the Title V permit because the condition defines the causes for modification or revocation of an NSR permit which can be considered extraneous to the Title V permit. The assumption underlying this determination is that if an NSR permit is revoked or modified through unsolicited action by DEQ, the Title V permit will be changed in a separate and independent action from the NSR change. The Title V permit will change to reflect the changes in applicable requirements brought about by the NSR change.

Condition 17 of the 2010 permit is not being included as an applicable requirement in the Title V permit because it is out-dated. The Part 70 regulations define specific inspection and entry requirements consistent with the issuance of a Title V permit. These requirements are described in Condition Q in the General Permit Condition Section of the Title V permit and are at least as stringent as the NSR requirements. Inclusion of this condition would be redundant and the requirements have been overtaken by the Title V (Part 70) regulations.

Condition 20 of the 2010 permit is not being included as an applicable requirement in the Title V permit because it is included in the Condition F in the General Permit Condition Section of the Title V permit and is included as part of the malfunction reporting requirements for the overall permit. Including this condition as a separate enforceable condition on the permitted equipment in addition to the entire listing of equipment covered by the Title V permit creates a situation where conditions are both redundant and confusing.

Condition 21 of the 2010 permit is not being included as an applicable requirement in the Title V permit because it is included in Condition Z in the General Permit Condition Section of the Title V permit and would be redundant to include it.

Condition 22 of the 2010 permit is not being included as an applicable requirement in the Title V permit. Condition T in the General Permit Condition Section of the Title V permit describes the requirements for transfer of ownership relative to the Title V permit. The transfer of ownership requirements for the NSR permit are therefore inappropriate for inclusion in the Title V permit.

Condition 23 of the 2010 permit requiring a copy of the NSR to be at the facility, is not being included as an applicable requirement in the Title V permit. Condition S in the General Permit Condition Section of the Title V permit describes the requirements for permit availability relative to the Title V permit. The permit copy requirements for the NSR permit are therefore

inappropriate for inclusion in the Title V permit.

STREAMLINED REQUIREMENTS

Some provisions of Subpart T – National Emission Standards for Halogenated Solvent Cleaning (40 CFR 63.460) can be streamlined by other provisions of Subpart T as follows:

Subpart T applicable requirements T1, T7, T8, and T20 all concern reduced room draft over the degreaser, the most stringent of these, T20, can apply for all of them. These provisions are applicable to E3-existing.

Subpart T applicable requirements T2 and T7 both concern freeboard ratio, the most stringent of these, T7, can apply for both of them.

Subpart T applicable requirements T3 and T9 both concern hoist speed, the most stringent of these, T9, can apply for both of them.

Subpart T applicable requirements T7 and T19 both concern refrigerated air blanketing, the most stringent of these, T19, can apply for both of them.

Additionally, Conditions #3 and #4 of the 2010 permit are identical to (and were based on) MACT requirements T4, T5, T6 and T7. Because of this, conditions #3 and #4 will be streamlined by the MACT requirements T4, T5, T6 and T7.

As all of the consolidated requirements are existing MACT Subpart T standards, that by definition (see periodic monitoring section) incorporate their own periodic monitoring, no special streamlined monitoring protocols are necessary.

GENERAL TERMS AND CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day. These conditions include:

A. Federal Enforceability
B. Permit Expiration
C. Recordkeeping and Reporting
D. Annual Compliance Certification

E. Permit Deviation Reporting
F. Failure/Malfunction Reporting
G. Severability
H. Duty to Comply
I. Need to Halt Reduce Activity Not a Defense
J. Permit Action for Cause
K. Property Rights
L. Duty to Submit Information
M. Duty to Pay Permit Fees
N. Fugitive Dust Emission Standards
O. Startup, Shutdown, and Malfunction
P. Alternative Operating Scenarios
Q. Inspection and Entry Requirements
R. Reopening for Cause
S. Permit Availability
T. Transfer of Permits
U. Malfunction as an Affirmative Defense
V. Permit Revocation or Termination For Cause
W. Duty to Supplement or Correct Application
X. Stratospheric Ozone Protection
Y. Accidental Release Prevention
Z. Changes to Permits for Emission Trading
AA. Emissions Trading

PERIODIC MONITORING

The EPA periodic monitoring guidance, dated September 18, 1998, indicates on page 4 that periodic monitoring is required for each emission point at a source, subject to Title V of the Act, that is subject to an applicable requirement. The units requiring periodic monitoring at this source are the vapor degreasers. Most of the applicable requirements for the degreasers come from MACT Subpart T which includes, as per EPA's periodic monitoring guidance, sufficient monitoring provisions to satisfy Title V periodic monitoring. The applicable periodic monitoring for the remaining degreaser requirements (from the 2010 NSR permit) is defined as follows:

Table 1 - Periodic Monitoring for the vapor degreasers (E3-Existing, E-3 New and E4)

	Limitation	Parameter	Monitoring	Recordkeeping	Reporting
1	The annual facility wide emissions from the vapor degreasers	perchloroethylene emissions, tons per year	calculated monthly as the sum of each consecutive 12 month	monthly mass balance of perchloroethylene.	Semi-Annual and Annual Compliance

	Limitation	Parameter	Monitoring	Recordkeeping	Reporting
	of perchloroethylene shall not exceed 5.28tons		period; hydrocarbon analyzer data for verification		Certification 9 VAC 5-80-110 F.2.a.
2	The Volatile Organic Compound emissions from the operation of the vapor degreasers shall not exceed 1.21 lbs/hr.	Hourly perchloroethylene emissions, lbs/hr	accumulated monthly, calculated based on monthly emissions and uptime; hydrocarbon analyzer data for verification	maintain records of perchloroethylene emissions	Semi-Annual and Annual Compliance Certification 5-80-110 F.2.a.

Table 1 above describes the periodic monitoring requirements for the degreasers E3 Existing, E3-New and E4. The requirements are generally contained in the 2010 permit, but some conditions have been developed to ensure that the periodic monitoring requirements of 9 VAC 5-80-110 E, have been met.

Item 1 is from Condition #11 in the 2010 permit that contains the emission limit. The emission calculations are developed from the material balance information provided by the source. The source is required to maintain records that demonstrate compliance with this annual limit. Records are kept on a monthly basis and the annual limit is calculated as the sum of each consecutive 12 month period. The hydrocarbon analyzer data will be used to verify compliance..

Item 2 is the short term limit for Perchloroethylene emissions from the degreasers. The pounds per hour emission limit was developed from projected material balance information while the degreaser was operating. Demonstrating compliance with the lbs/hr emission limit is accomplished by maintaining Perchloroethylene emission records and the hours of operations on a monthly basis. By dividing these numbers, the pounds per hour of Perchloroethylene can be determined and reported.

All other applicable requirements that might be subject to periodic monitoring are from the MACT subpart T standard (promulgated in 1993, most recent amendment 70 FR 75346, on December 19, 2005). By definition, per EPA's periodic monitoring guidance (which includes CAM), MACT and NSPS standards promulgated after 1990 contain sufficient monitoring to meet Title V periodic monitoring standards without any additional monitoring.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation (9 VAC)	Pollutant Emitted (5-80-720 B)	Rated Capacity (5-80-720 C)
B2	Parker Natural Gas Fired Boiler	5-80-720 C.2.	N/A	0.97 MMBtu/hr
B3	Parker Natural Gas Fired Boiler	5-80-720 C.2.	N/A	3.0 MMBtu/hr
E1	Hairpin Bender Lubrication	5-80-720 B.2.	VOC	N/A
E2	Punch Press Lubrication	5-80-720 B.2	VOC	N/A
E4	Brazing	5-80-720 B.1.	PM-10	N/A
E5	Welding	5-80-720 B.1.	PM-10/HAP	N/A
E6	Paint Spray Booth (water based inks)	5-80-720 B.2.	VOC	N/A
E7	Crafting Saws	5-80-720 B.1.	PM-10	N/A

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

STATE-ONLY APPLICABLE REQUIREMENTS

The following Virginia Administrative Codes have specific requirements only enforceable by the State and have not been included in the Federal Operating Permit:

- 9 VAC 5-40-340, Standard for odor
- 9 VAC 5-60-200, Emission Standards for Toxic Pollutants from Existing Sources (Rule 6-4) et. seq

PUBLIC PARTICIPATION

The proposed permit was placed on public notice in the *Style Weekly* on April 27, 2011. The 30th day for the end of the comment period is Friday, May 27, 2011. No public comments have been received.

EPA COMMENTS

EPA comments were received on May 10, 2011 and indicated there were typos or remnants of old conditions in Conditions III.A.3 and III.A.4 which were corrected in the final document.